

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of)	
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Tuqiang NI et al.)	Group Art Unit: Not Yet Assigned
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Application No.: Not Yet Assigned)	Examiner: Not Yet Assigned
)	
Filed: February 21, 2001)	
)	
For: GAS INJECTION SYSTEM FOR)	
PLASMA PROCESSING)	
)	
)	

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Prior to examination, please amend the above-identified application as follows:

IN THE CLAIMS:

Please cancel Claim 1 and add new Claims 25-36 as follows:

--25. A gas injector for supplying process gas to a plasma processing chamber wherein a semiconductor substrate is subjected to plasma processing, the gas injector comprising:

gas injector body sized to extend through a chamber wall of the processing chamber such that a distal end of the gas injector body is exposed within the processing chamber, the gas injector body including a plurality of gas outlets adapted to supply process gas into the processing chamber.

26. The gas injector of Claim 25, wherein the gas outlets are located in an axial end surface of the gas injector body.

27. The gas injector of Claim 25, wherein the gas body is elongated in an axial direction, the gas outlets including a center gas outlet extending in the axial direction and a plurality of angled gas outlets extending at an acute angle to the axial direction.

28. The gas injector of Claim 25, wherein the gas outlets are sized to inject the process gas at a subsonic, sonic, or supersonic velocity.

29. The gas injector of Claim 25, wherein the gas injector includes a planar axial end face which is dimensioned so as to be flush with an interior surface of a dielectric window forming the chamber wall.

30. The gas injector of Claim 29, wherein the gas injector includes at least one seal adapted to contact the dielectric window when the gas injector is mounted in the dielectric window.

31. The gas injector of Claim 25, wherein the gas injector includes a closed distal end surface and the gas outlets inject process gas at an acute angle relative to a plane parallel to the distal end surface.

32. The gas injector of Claim 25, wherein the gas injector is adapted to be removably mounted in an opening in the chamber wall and includes at least one O-ring providing a vacuum seal between the gas injector and the chamber wall.

33. The gas injector of Claim 25, wherein the gas injector body includes a surface adapted to overlie an outer surface of the chamber wall.

34. The gas injector of Claim 25, wherein the gas injector body includes an annular flange adapted to overlie and contact an outer surface of the chamber wall.

35. The gas injector of Claim 25, wherein the gas injector body includes at least one O-ring seal on an outer surface of the gas injector body.

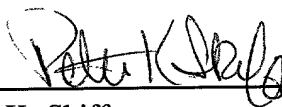
36. The gas injector of Claim 25, wherein the gas injector body includes a first O-ring seal on an outer surface of the gas injector body and a second O-ring seal in a surface of a flange extending from the outer surface of the gas injector body.--

REMARKS

The present application is a continuation application wherein the original claims have been canceled and new Claims 25-36 added for prosecution. In view of the foregoing, favorable action in connection with this application is respectfully requested.

Respectfully submitted,

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